

CENTRAL INTELLIGENCE AGENCY

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

S-E-C-R-E-T

25X1

COUNTRY	East Germany/Sino-Soviet Bloc	REPORT		25X1
SUBJECT	VEB Werk fuer Fernmeldewesen WF Production and Development	DATE DISTR.	29 September 1955	25X1
		NO. OF PAGES	6	
DATE OF INFO.		REQUIREMENT		
PLACE ACQUIRED		REFERENCES		25X1
DATE ACQUIRED				25X1

This is UNEVALUATED Information

SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

1. Set out in paragraphs 2 to 35 below is a review of the status as of 3 July 1955 of the VEB Werk fuer Fernmeldewesen WF's 1955 tasks. The omission of tasks mentioned in previous reports indicates that there is at present nothing further to report. Paragraphs 37 to 46 deal with other current work in the factory and miscellaneous information obtained there.
2. K5-201 - film scanner for normal film.
This instrument is for scanning a positive or negative film. The development prototype was completed in spring 1955 and, since a second specimen cannot be produced in the short time available, the prototype will be put into a saleable condition and transported to Plovdiv, Bulgaria, for the trade fair there in the autumn.
3. K5-204 - an electronic concert instrument.
Work is proceeding on this task, which it is hoped will find an export market.
4. K5-212 - customer's television servicing kit.
Series production has begun and orders have been received for 100 sets for the European Satellites. The East German domestic requirements are expected to be 200 sets in the course of the next year.
5. K5-222 - modulation measuring instrument for FM transmitters.
This instrument is to have a range of 40-230 mcs and will measure up to 5% amplitude modulation. The maximum permissible signal input will be 10 kw. A prototype has been tested by the post office authorities.
6. K5-223 - spectral analyzer.
Series production will begin shortly. Technical specifications are:
 - a. frequency range: 95-230 mcs; the range is divided into 8 sections;
 - b. the instrument operates on the beat-note principle (Suchtonprinzip);
 - c. wobble frequency: 25 cycles;

25X1

S-E-C-R-E-T

25X1

STATE	X	ARMY	X	NAVY	X	AIR	X	FBI		AEC		OSI	Ev	X	ORR	Ev	X
(Note: Washington distribution indicated by "X"; Field distribution by "#")																	

S-E-C-R-E-T

25X1

- d. frequency deviation (Wobbelhub): 300-500 kcs with mark-scanning on the picture of the oscillograph tube (Markeneintastung auf dem Schirmbild der Oszillographenroehre);
 - e. sensitivity: about 50/ μ v;
 - f. resolution: 5-10 kcs.
7. K5-232 - coaxial aerial-feeder.
150 m of the proposed 250 m have been completed and are being tested at the aerial testing ground in Berlin-Karlshorst. Although this feeder is intended for use in a vertical position, it is being laid out on the ground. VHF tests with an output of 10-20 kw have not yet taken place. The first length of this feeder will, as previously reported, be used for the television transmitter at Marlow, Mecklenburg, and the second will be used for the new Berlin television transmitter on the Prenzlauerberg.¹
 8. K5-233 - a paper on industrial television.
Theoretical details are being worked out for an installation in an operating theater. The construction of the prototype equipment has not begun, but the Charité Hospital in East Berlin and a clinic at Halle University are showing interest in the subject.
 9. K5-381 - test route for pulse code modulation.
The HF component of the equipment is ready, but the development of the whole project has been interrupted by the dismissal of the engineer responsible for it, Dipl. -Ing. Kurt Steffenhagen, who lives in West Berlin.
 10. K5-382 - field strength measuring set.
There is nothing further to report on the three instruments for the frequency ranges 300-700 mcs, 1400-1600 mcs, and 2800-3200 mcs. On the other hand, orders have been received for 50 complete sets with the ranges 0.1-25mcs, 25-100 mcs and 100-320 mcs for export to Eastern European States and China.
 11. K5-383 - HF wattmeter.
This instrument is to measure pulses with a duration of about 1/ μ sec.
 12. K5-384 - rotating field strength measuring circuit.
The laboratory prototype was in operation in April 1955. Special theoretical consideration was given to the measurement of the area of the cross section of the measuring circuit and for reflection-free transitions from circular to square section conductors. A prototype is to be ready by the end of 1955.
 13. K5-385 - component parts for the 1.25 cm technique.
The previously reported components are being made for the Academy of Sciences' Research Institute for Magnetic Materials at Jena. In March 1955, the Institute supplied the Werk WF with several meters of square, hollow conductor for use in the 1.25 cm range.
 14. K5-388 - wide band test amplifier.
Contrary to previously-given assurances, the 6 AK 5 tube cannot be produced in East Germany, and accordingly this task has come to a stop. The use of different types of tubes produced unsatisfactory results because of too low input active resistance and incorrect S/C relationship (S/C Verhaeltnis).
 15. K5-389 - Two-beam oscillograph.
The prototype delivered some time ago to the USSR was not provided with an input voltage potentiometer; this deficiency is now to be made up. The instrument has not yet gone into series production.
 16. FS-397 - pulse phase meter.
In spring 1955, a baseboard lay-out was set up for testing the principle on which the instrument was designed. When this stage of the development work has been reached, a comparison will be made with the results achieved in VEB Funkwerk Koepenick, and a working party will then decide which method is to be developed further.
 17. K5-398 - measuring equipment for the 3 cm wavelength.
Details have been handed over to the instrument-building section of the

S-E-C-R-E-T

25X1

ILLEGIB

Page Denied

S-E-C-R-E-T

25X1

position of the Works, even these resources have been cancelled and the work has stopped.

30. K5-224 - spectral analyzer.
This task has not been authorized.
31. K5-226 - linearity measuring instrument.
This task has not been authorized.
32. K5-229 - decimeter high power television transmitter.
Until the production of a power klystron, this transmitter was to be developed as a test transmitter in the form of a symmetron (in the last stage), using metal-ceramic valves. The task was not authorized, but, as part of the development work of the power klystron, preparatory work will be carried out for a television transmitter with a decimeter wavelength klystron. The theme will be submitted again for the 1956 development plan, incorporating a klystron in the last stage.
33. K5-392 - pulse generator for 0.3-1 μ sec.
This was intended for controlling the test transmitter K5-391.²
34. K5-393 - frequency deviation meter for HF and VHF range.
This task was not authorized, although supported by technical departments of the Ministry for Posts and Telecommunications. It had been hoped to use this instrument for measuring deviations of 10^{-5} or 10^{-6} from a set frequency.
35. F5-424 - pulse regeneration in television installations.
This task has not been authorized.
36. Projects to be resubmitted as 1956 tasks:
 - a. K5-205 - brightness meter
 - b. K5-208 - commercial television receiver
 - c. F5-227 - research on transmitters for the third television band
 - d. F5-228 - decimeter television aerial
 - e. K5-231 - color component meter for television picture tubes
 - f. K5-394 - flicker testing instrument
 - g. K5-409 - rotating wave guide test circuit for the 3 cm wavelength.
37. Magnetron LMS 1000
Very few of these have so far been called for by VEB Funkwerk Leipzig-Plagwitz; this fact has been interpreted in the Werk WF as indicating that no very significant progress can have been made there with 10 cm radar.
38. At the turn of the year, Yevgeniy Petrovich Solovov, a senior official in the Soviet Trade Delegation, called on the managing director Rudi Mueller to thank him for his cooperation in the past, to stress the importance of the Werk WF to the USSR, and to express the hope that productive cooperation would continue.
39. USSR orders
On 7 and 8 March 1955, a Soviet officer named Vaniyev (fnu) visited the Werk WF and discussed with Dr. Ing. Guenther Ulrich and Dipl.-Ing. Eckhard Rehbock an order for the following three instruments, which was subsequently placed with the Werk WF via WTZ (Wissenschaftlich-Technische Zusammenarbeit) (the Office of Scientific-Technical Cooperation):
 - a. Two test receiver equipments for wavelengths from 30 to 100 cms;
 - b. Two field strength measuring sets for wavelengths from 15 to 100 meters, with directional as well as rhombic aerials (nonrotatable, but to be laid out around the station as with Bronny (sic) equipment);
 - c. Two travelling wave tube amplifiers for the 7.5 cm wavelength.

S-E-C-R-E-T

25X1

S-E-C-R-E-T

25X1

In the discussion, it was stated that these instruments were required for research purposes and that an order for series production would be given later. The representatives of the Werk WF were somewhat skeptical, however, because of the Russian practice of ordering prototypes and then having them copied in the USSR.

40. VHF and television transmitter exports.

It is hoped, after the completion of the five 10 kw television transmitters required for East Germany, to build six more for export. On the other hand, the departure for the West of Dipl.-Ing. Rehbock constitutes such a loss to the Werk WF that it may prove necessary to cancel the export construction program of VHF and television transmitters.⁷

41. Teleprinters.

The development has been completed of a teleprinter which, by use of a double shift device, produces the 72 characters required in the Iranian language.⁴

42. VEB Glashuetzte Weisswasser.

During March 1955, the VEB Glashuetzte Weisswasser, previously subordinate to the Ministry for Light Industry, was placed under the control of HV RFT (Hauptverwaltung Radio- und Fernmeldetechnik - Main Administration for Telecommunications). This factory operates its own development branch and the practical effect of this change will be that it will now work for the Werk WF.

43. Carrier equipment.

The carrier equipment department under Georg Kleinschnitts is developing a 60-channel equipment with the type number V-60. This will be followed by a 120-channel equipment, to be called V-120.

44. Visit of Polish engineers.

On 23 February 1955, five Polish engineers came for a two-day visit to Werk WF and were taken around all the laboratories and the aerial testing ground. The visit was arranged by WTZ and was not well received by the Werk WF, mainly because no engineers from the plant have ever been allowed to accept any of the many invitations received for reciprocal visits to other Soviet Bloc countries.

45. Visit of Bulgarian engineers.

A commission of Bulgarian engineers, who came to Berlin to discuss alterations required on the Sofia medium wavelength transmitter, visited the Werk WF early in March. This transmitter was built by Telefunken before 1945 and was later modified to use Russian tubes. It is now to be remodified to use RS 566 tubes manufactured by Werk WF.

46. East German television service.

The following difficulties have arisen in connection with the putting into service of television transmitters because the State Planning Commission had not carried out sufficient preparatory work:

- a. In January, the 10 kw transmitter supplied for Berlin by VEB Sachsenwerk Radeberg was still not working properly;
- b. The costs for setting up the transmitters in their locations were omitted from the estimates;
- c. The characteristics of the feeder cables from the transmitters to their aerials are so bad that 70% of the transmitter output is lost in the cable.

Director Mueller, Dr.-Ing. Ulrich, and Dipl.-Ing. Rehbock were called before the State Planning Commission in this connection on 25 January 1955, but, with the aid of the technical specification for the task, they were able to show that the Werk WF was not responsible for these troubles, which should have been laid at the door, in the first place, of the State Planning Commission itself, and, in the second place, of VEB Anlagenbau.

S-E-C-R-E-T

25X1

S-E-C-R-E-T

25X1

47. The decimeter directional link for television relay between Berlin and Dresden remains unsatisfactory. On 14 February 1955, Dipl.-Ing. Ernst Augustin of the Adlershof Television Center had a discussion there with three representatives [redacted]

25X1

[redacted] on the question of equipping this link with appropriate measuring instruments, in order to ensure satisfactory transmission over it.⁵

48. On 25 April 1955, a confidential discussion took place between Director Mueller, Dr.-Ing. Ulrich and Dipl.-Ing. Rehbock to consider a request from State Secretary Kurt Gebhardt of the Ministry of Post and Telecommunications to prepare a report on the time needed for and the cost of converting the 4 television installations (10 kw in Band III), delivered by the Werk WF in 1954, from CCIR (Comite Consultatif International Radiodiffusion) specifications to OIR (Organisation Internationale Radiodiffusion) specifications. This would mean that the spacing between the carrier frequencies for picture and sound would be changed from 5.5 mcs to 6.5 mcs and the transmitters would no longer conform to the accepted Western European practice of keeping television transmissions in the agreed channels in each band. The result - the impossibility of reciprocal television reception between East Germany and Western Europe - was justified by Johannes Gradecki of the Ministry of Post and Telecommunications on the ground that East Germany must maintain closer contact with the Eastern European countries, where the OIR specifications were in force.⁶

Comments:

1. [redacted]
2. [redacted]
3. It is thought that the Russians still regard Werk WF as being of considerable importance to them in a field in which they are still far behind the West.

25X1

4. [redacted] This machine seems to be rather more harmless that at first thought.

25X1

5. [redacted]
6. [redacted] anyone who knew what he was about would be able to modify OIR specification sets to receive CCIR specification transmissions, but not vice-versa.

25X1

7. [redacted] Comment: It has been reported that the East German government has suspended indefinitely the television transmitter development program because it believed that TV transmitters could be purchased more economically in the West. The order to discontinue work was effective early in July 1955.

25X1

25X1

S-E-C-R-E-T

25X1